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Liesl Eichler Clark, President

Michigan Energy Innovation Business Council

Institute for Energy Innovation

My name is Liesl Eichler Clark and I'm president of the Michigan Energy Innovation Business Council and the Institute for Energy Innovation.

Michigan EIBC is a business trade association of over 100 companies doing business in the advanced energy industry in Michigan. Michigan EIBC companies include energy efficiency implementers and manufacturers, wind and solar developers and installers, advanced battery technology developers, solid state lighting companies, and advanced mobility companies, to name some of the segments.

Mobility is changing rapidly as the pace of technological change continues to explode. Our Detroit OEMs are competing not only in the global market with other automakers but also with technology and innovation players who are smashing every expectation of what we think of as transportation so that the focus is how to build the runway to an advanced mobility future. Just yesterday at the Intelligent Vehicle Testing Symposium at the ITS World Congress in Montreal, Governor Snyder said, "Mobility is the convergence of the tech and automotive industries".

That future is reliant on the rapid evolution of technology that is enabling greater connectivity and sharing of information between vehicles and further. That same expansion in computing power is supporting advanced sensors and the technology enablers that step us along the path to an autonomous future.

The intertwining of technology, shared infrastructure, population changes, and more are offering Smart Cities solutions that – if done correctly – can build a landscape that utilizes these advancements to serve all segments of our populations.

The ride-sharing trend is expanding – as well - to empower portions of our population to do what they want to do and get where they want to go to fuel their own futures – often without owning a vehicle of their own.

But, the enabler of all of this automation, advanced computing, and sharing is electrification.

Autonomous vehicles require electricity to power their telecommunication and data management features already, and electric drivetrains offer additional advantages in

acceleration and deceleration for connected and self-driving vehicles. Put simply, it is easier for computers to drive electric vehicles because they have fewer moving parts and the main components – battery, inverter, and electric motor – more easily communicate with each other.

And industry is leading the way. Automakers are making impressive steps in vehicle technology and storage companies are shedding cost and investing in infrastructure to produce the needed batteries.

Battery costs continue to decline, while storage densities continue to increase – creating a virtuous cycle that makes batteries and EVs increasingly attractive and economic. Batteries could not compete with the energy density of petroleum fuel until the invention of the lithium-ion battery, which enables better energy density. Since this innovation, battery companies have continued to make denser and longer-lasting batteries, thus overcoming the initial hurdle to battery-powered cars.

As costs come down and as vehicle technology integration gets smarter, faster, and cheaper, customer demand grows. A recent Navigant report projects electric vehicle sales to be 50% higher in 2017 than in 2016.

Customer education about EVs and the benefits of driving electric and deployment of charging infrastructure continue to be two primary barriers to overcome.

The chicken and egg problem continues to persist between sales of EVs and charging infrastructure. Electric vehicle owners need access to public charging. This includes charging stations off highways, in parking garages at workplaces, and commercial corridors of cities where gas stations are present. Electric vehicle owners need to know that they will have just as much opportunity to charge their vehicle as they would have to fill up a gas car. Michigan's utilities, along with private sector companies, can play a pivotal role in developing this infrastructure. Time and time again we hear that if done correctly, utility programs could spur EV growth in Michigan, benefitting all residents.

Utilities are looking at their business models and talking to their customers to understand loads for charging and how EVs can support load management and other ancillary services. Utilities are increasingly recognizing that electric vehicles represent a potential growth market in a world of otherwise declining or level electricity demand. Dynamic rates and time of use rates are needed to enable the right signals to ensure that we don't just add a huge amount of load to the grid but instead use it to shave peaks.

There was recently a flurry of activity around the critical puzzle piece of charging infrastructure for the build-out of plug-in electric vehicle (EV).

Duke Energy entered into a settlement agreement that, if approved by the Florida Public Service Commission, would result in the creation of an $8 million EV charging program.

A settlement was also reached in an AEP rate case that, if approved by the Public Utility Commission of Ohio, will authorize a $10 million investment in charging infrastructure. Then there was Oregon, where separate settlement agreements were filed by PacifiCorp and Portland General that would include over $2 million (in PacifiCorp's case) and just under $2 million (in Portland General's case) to fund charging infrastructure.

With models proliferating and costs coming down, there are real world options that will soon have experiences to help us understand costs and benefits to all players.

And the charging of today is not the infrastructure we need for the future.

Policy makers are watching these regulatory approaches play out as they work to enable infrastructure through planning, rate design, and incentive structures.

At the federal level, lawmakers are taking steps to move self-driving vehicle development forward. In fact, recently the U.S. House took an unusual bipartisan approach by passing HR 3388, titled, "the SELF DRIVE Act," to create a uniform regulatory structure for this new vehicle technology.

In Michigan, the 21-member Council on Future Mobility was created by PA 332 last year and will produce annual recommendations that allow Michigan to respond in real-time to changes in the advanced transportation landscape. The council made its first recommendations in March of this year and is tasked with recommending policy changes to ensure Michigan continues to be the world leader in automated, driverless, and connected vehicle technology.

And, thanks to your legislation signed by Governor Rick Snyder last year, Michigan is one of just 6 states that allow self-driving vehicles on public roads.

Marrying together state mobility strategies with opportunities to scale EV usage and battery development gives Michigan a unique win-win opportunity.

As with so much of the world these days, technology is acting as the connective tissue that links the possible to the practical in the vehicles, in the charging infrastructure, in the sharing economy in cities, and beyond.

The path forward is innovative technology, innovative business models, and innovative policy approaches.

All of this work comes together to be so much more than about the car – it's about building an automated, electrified ecosystem. And Michigan needs to continue to act with urgency.

Despite the fact that mobility and electrification are increasingly interconnected, many states' mobility strategies are not well-aligned with the battery and vehicle electrification strategies necessary to move the industry forward. I would argue that Michigan has more work to do to better align our policy and regulatory framework to advance autonomous and electric vehicles.

We must consider how the vehicles of the future will be fueled or charged, and what technological, policy, and infrastructure advancements are needed.

So I've talked a lot about the potential benefits and opportunities that we have here in Michigan to move our transportation sector toward greater mobility and electrification. In addition to the utilities, automakers, private sector, and regulators, the legislature plays a key role in advancing AVs and EVs.

Despite our strengths, to fully realize economic development potential around advanced mobility, Michigan must better align the state's EV and battery strengths with mobility initiatives. This can be done by:

1) expanding the Michigan Council for Future Mobility (which was created by PA 332 last year) to include specific expertise in EVs, batteries, and EV infrastructure;

2) establishing an internal coordinating group at the Michigan Economic Development Corporation to align battery, EV, AV, and mobility economic development efforts;

3) revisiting regulatory and legislative strategies around EVs and batteries to reduce barriers to deployment and facilitate infrastructure growth, including eliminating regulatory penalties for EVs; and

4) reconvening the Michigan Plug-In Electric Vehicle Taskforce at the Michigan Public Service Commission to convene utilities, vehicle OEMs, mobility service providers, third-party charging companies, and other stakeholders to address EV charging issues, with a particular focus on the nexus between EVs, autonomous vehicles, and advanced mobility.

As I mentioned before, the Michigan Council for Future Mobility has great potential to provide expert policy advice to the Governor and the Legislature on mobility issues. The Council should be expanded to include specific expertise in electric vehicles, batteries, and electric vehicle infrastructure.

As I said at the beginning of my comments, Michigan's EV and AV industry have a bright future – but what we do now here in the legislature and in the regulatory space will determine whether Michigan can realize and take advantage of those opportunities. We need to better align our policy and regulatory framework. And this means we can't only focus on mobility and innovation – electrification plays a key role in advanced mobility and the future of our transportation sector.